**WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID:** 2005GU58B

**Title:** Watershed Management for Enipein Watershed, Pohnpei Island, the Federated States of Micronesia

**Project Type:** Research

**Focus Categories:** Hydrology, Surface Water, Sediments

**Keywords:** watershed management, land use, sedimentation, rivers

**Start Date:** 03/01/2005

**End Date:** 02/28/2006

**Federal Funds:** $36,187

**Non-Federal Matching Funds:** $0

**Congressional District:**

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**Abstract**

The Enipein Watershed that is situated in the Kitti Municipality in the South of Pohnpei Island is unique in many aspects. This area of approximately 10 square miles is home to unique native forests; a spectacular web of rivers, streams and fresh water swamps; and extensive mangrove forests, sea grass beds and coral reefs. According to the Conservation Society of Pohnpei (CSP) many of Pohnpei's 110 endemic plants and 13 endemic bird species along with thousands of other terrestrial and marine creatures are found in this area. One of its most astounding features is the unique occurrence of Pohnpei's only stand of the endemic plant, Pwuhr (Ragraea berteriana), mainly used to make mwaramwar (lei). The Enipein Watershed Basin is also unique because it encompasses part of the Pohnpei Watershed Forest Reserve, the whole of the Enipein Mangrove and Marine Sanctuary/Park, and the Nahtik Marine Protected Area. However,

with a growing population and need for cash, the Enipein watershed's fragile habitats and invaluable resources are becoming highly threatened. In recent years large areas of native forests and ecologically sensitive areas are being cleared for housing and road development projects and unmanaged agricultural activities (e.g., sakau/kava plantations). These new development activities are now negatively impacting the biodiversity health of the area, the headwaters and freshwater resources as well as the mangrove forests and coral reefs. To implement any watershed management/protection plan requires having a better understanding of the physical and environmental components of the watershed. This includes how much rain the watershed receives, how much flow runs through the streams, what is the sediment load in the streams during the year, and how all these dynamic components are related to man's activities within the watershed. The lack of baseline information about the components of watersheds is a critical issue throughout the Federated States of Micronesia. When the political status of the Federated States of Micronesia with the United States changed from Trusteeship into Free Association in 1986, all the stream flow gages that were built and monitored by the US Geological Survey were halted and have remained effectively abandoned. Since 1986 there has been no information on how much flow runs through the streams and how much sediment is being carried to the reefs. The objectives of this project are to: 1) install stream flow, sediment, and raingages for selected sites within the Enipein Watershed; 2) monitor the gages and develop a rating curve for selected sites; 3) develop a correlation between stream flow, sediment load and rainfall; and 4) develop a database for future use. The result of this project will be development of baseline information and correlations among the dynamic components of the Enipein watershed environment. The baseline information will be used for future comparison between Enipein watershed and other watersheds that have less human activity such as the Madolenihmw watershed. The results will reveal the impact of the various activities such as land clearing, land sliding/slope failures, and population growth on the quality of the watershed. This information will help various parties such as Conservation Society of Pohnpei (CSP), Land Management, the Pohnpei EPA, and local mayors to implement plans for protecting the watersheds in Pohnpei.